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SUMMARY

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LOCAL RAW MATERIALS IN THE PRODUCTION OF GLASS, BRICKS AND TILES IN U.A.R.

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No. 372

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D. 13

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SUMMARY

I. GLASS

The modern glass manufacture which started in Egypt in 1932 has been developed since 1952. The total glass production in Egypt in 1961 amounts to about 30,000 tons and is expected to reach 100,000 tons in 1970.

The investigations carried out in the glass - research unit of the National Research Centre, Cairo, made possible the use of local sands in the manufacture of cohite colourless bottles and tableware glass, sheet glass and rolled plate glass in which about 23,000 tons of local sands were used.

Syna sands are suitable, particularly after simple washing with water, for making white colourless glass.

Maadi sand is suitable for making sheet, rolled plate, plate and colourless glass.

Sands from the deserts around Cairo, the deserts between Cairo and Alexandria and Cairo and Suez are suitable for making coloured glass.

As a result of these findings the glass - industry in Egypt will cover in the near future the production of coloured glass for bottles, jars and tableware. The sheet and plate glass production is expected to be doubled and borosilicate and lead oxide-containing glass for optical and decorative (crystal) purposes will be manufactured in 1964 in Cairo.

Possible sources of alkalies(mostly Na_2O) are the sodium sulphate from the rayon industry, felspars and natron from the Natron Valley.

Lime and magnesia are introduced in the form of limestone and dolomite, respectively. The recent discovery of the low-iron magnesite will enable its use in place of imported low-iron dolomite.

Batches for the manufacture of different types of glass such as sheet, rolled plate, plate glass, tableware and bottles are quoted. It is shown that it is possible to melt in one and the same furnace glass suitable for more than one type of glass, e.g., the sheet and plate glass can be made from the same glass composition and similarly for bottles and tableware glass.

II. BRICKS AND TILES

Since ancient times the UAR depends on the Nile silt for brick making. The bricks are of low strength and devoid of good finish due to the non homogenity of the silt raw materials. After the completion of the High Dam at Asswan the major part of the silt will be deposited behind the dam, resulting in a serious shortage of the building industry only source of raw material. They use about eight million tons of the Nile silt every year.

The possible use of natural raw materials to replace the Nile silt in the brick industry was examined. Clays and sands found in abundant in the UAR, Syria and Libyia were studied by subjecting their mixes to a wide series of technological examination and industrial applications. Their suitability for perforated brick making have been proved by semi-mechanical and mechanical means. They are characterised of good finish, variable colours, light weight, good strength and insulating properties.

Technological studies of the different mechanical forming methods have been demonstrated. Stress is given to produce a bearing wall perforated building unit, as a mean to cut the building costs of the farmer's houses.

A new design for the UAR low cost houses built from such units has been claimed.

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